

CLAIMS

What is claimed is:

- 1 1. A cable harness comprising:
2 a frame capable of being attached to a rack, the rack having a number of blades disposed
3 therein, the frame including a number of channels, each channel for routing at
4 least one cable from one of the blades and toward a rear of the rack; and
5 a channel array capable of being coupled with the frame, the channel array including a
6 number of channels, each channel for routing at least one cable from one of the
7 blades and towards one side of the rack.
- 1 2. The cable harness of claim 1, further comprising:
2 a second channel array capable of being coupled with the frame, the second channel array
3 including a number of channels, each channel for routing at least one cable from
4 one of the blades and towards an opposing side of the rack.
- 1 3. The cable harness of claim 2, wherein the frame defines a first bay for
2 receiving the channel array and a second bay for receiving the second channel array.
- 1 4. The cable harness of claim 3, wherein each of the first and second bays
2 includes at least one guide element, the at least one guide element of each bay to position
3 a channel array in that bay.

1 5. The cable harness of claim 3, wherein each of the channel array and the
2 second channel array is coupled with the frame using at least one fastener.

1 6. The cable harness of claim 3, wherein each of the channel array and the
2 second channel array is coupled with the frame by a snap fit.

1 7. The cable harness of claim 1, wherein each of the channels of the frame
2 routes the at least one cable into an open cavity of the rack and toward the rear of the
3 rack.

1 8. The cable harness of claim 7, wherein, at the rear of the rack, the at least
2 one cable associated with each of the channels is routed upwards towards a top of the
3 rack.

1 9. The cable harness of claim 1, wherein each channel of the channel array
2 includes a hook for receiving an anchoring device, the anchoring device for holding a
3 number of cables.

1 10. The cable harness of claim 1, wherein each channel of the channel array
2 includes a pair of opposing slots for receiving an anchoring device, the anchoring device
3 for holding a number of cables.

1 11. The cable harness of claim 1, further comprising a cover capable of being
2 attached to the frame, the cover overlying the channel array.

1 12. The cable harness of claim 1, wherein each channel of the frame
2 comprises a generally rectangular-shaped open channel having a floor and two opposing
3 side walls extending upwards from the floor.

1 13. The cable harness of claim 1, wherein each channel of the channel array
2 comprises a generally rectangular-shaped open channel having a floor and two opposing
3 side walls extending upwards from the floor.

1 14. The cable harness of claim 13, wherein each of the channels of the channel
2 array extends along an approximate ninety degree arc.

1 15. The cable harness of claim 13, wherein the floor is generally semicircular
2 in shape.

1 16. The cable harness of claim 1, wherein each of the frame and the channel
2 array comprises a plastic material.

1 17. The cable harness of claim 16, wherein each of the frame and the channel
2 array is constructed using a molding process.

1 18. A cable clip comprising:
2 a longitudinally extending body having a first end and an opposing second end;
3 a number of clasps disposed on the body between the first and second ends, each of the
4 clasps for holding a cable;
5 a first coupling mechanism disposed at the first end of the body, the first coupling
6 mechanism for attaching the cable clip to one end of another cable clip; and
7 a second coupling mechanism disposed at the second end of the body, the second
8 coupling mechanism for attaching the cable clip to one end of another cable clip.

1 19. The cable clip of claim 18, wherein the first coupling mechanism is
2 identical to the second connector.

1 20. The cable clip of claim 19, wherein the first coupling mechanism is
2 oriented 180 degrees relative to the second coupling mechanism.

1 21. The cable clip of claim 20, wherein each of the first and second coupling
2 mechanisms comprises:
3 a resiliently flexible arm extending from one of the ends of the body and disposed on one
4 side of the body, the flexible arm having a protrusion disposed at an outer end
5 thereof; and
6 a notch disposed on an opposing side of the body proximate the one end, the notch to
7 receive a protrusion on a resiliently flexible arm of a coupling mechanism on
8 another cable clip.

1 22. The cable clip of claim 21, wherein each of the first and second coupling
2 mechanisms further comprises:
3 a pair of opposing guide posts disposed on the body proximate the flexible arm and
4 extending from the one end of the body, the pair of opposing arms to mate with a
5 pair of opposing guide surfaces disposed on another cable clip; and
6 a pair of opposing guide surfaces disposed on the body adjacent to the opposing guide
7 posts, the opposing guide surfaces to mate with a pair of opposing guide posts
8 disposed on another cable clip.

1 23. The cable clip of claim 21, wherein the resiliently flexible arm includes a
2 handle, the handle comprising an angled extension extending from the outer end of the
3 resiliently flexible arm.

1 24. The cable clip of claim 18, wherein each of the clasps comprises:
2 a first resiliently flexible arm extending from the body;
3 a second resiliently flexible arm extending from the body and spaced apart from the first
4 resiliently flexible arm;
5 wherein a space between the first and second arms has a size greater than a diameter of
6 the cable.

1 25. The cable clip of claim 24, wherein an outer end of the first arm is
2 separated from an outer end of the second arm by a distance less than the diameter of the
3 cable.

1 26. The cable clip of claim 24, wherein an equal number of the clasps is
2 disposed on each of opposing sides of the body.

1 27. The cable clip of claim 18, wherein the body comprises a plastic material.

1 28. The cable clip of claim 27, wherein the body is formed using a molding
2 process.

1 29. A bundle clip comprising:
2 a cylindrical shaped body extending from a first end to an opposing second end and
3 defining an interior region having size sufficient to receive a number of cables;
4 an entry disposed between the first and second ends and opening into the interior region,
5 the entry having a size less than a diameter of one of the cables;
6 a first coupling mechanism disposed on a side of the body, the first coupling mechanism
7 for attaching the bundle clip to another bundle clip; and
8 a second coupling mechanism disposed on an opposing side of the body, the second
9 coupling mechanism for attaching the bundle clip to another bundle clip.

1 30. The bundle clip of claim 29, wherein the body comprises a resiliently
2 flexible material.

1 31. The bundle clip of claim 30, wherein upon insertion of a cable into the
2 entry, the body elastically deforms to expand the entry to a size sufficient to receive the
3 cable.

1 32. The bundle clip of claim 30, wherein the resiliently flexible material
2 comprises a plastic material.

1 33. The bundle clip of claim 32, wherein the body is formed using a molding
2 process.

1 34. The bundle clip of claim 29, wherein each of the first and second ends of
2 the body proximate the entry are rounded.

1 35. The bundle clip of claim 29, wherein each of the first and second ends of
2 the body proximate the entry are semicircular in shape.

1 36. The bundle clip of claim 29, wherein the first coupling mechanism
2 comprises:
3 a keyway disposed on an exterior of the body, the keyway to slidably receive a mating
4 key disposed on a second bundle clip; and
5 a resiliently flexible arm disposed on the exterior of the body proximate the keyway, the
6 arm having a protrusion extending from an outer end thereof;
7 wherein, upon insertion of the key of the second bundle clip into the keyway, the
8 protrusion on the outer end of the arm mates with a corresponding notch on the
9 second bundle clip.

1 37. The bundle clip of claim 29, wherein the second coupling mechanism
2 comprises:
3 a key disposed on the exterior of the body, the key to slidably mate with a corresponding
4 keyway disposed on a second bundle clip; and
5 a notch disposed on the exterior proximate the key;
6 wherein, upon insertion of the key into the keyway of the second bundle clip, the notch
7 mates with a protrusion on an end of a resiliently flexible arm extending from the
8 second bundle clip.

1 38. The bundle clip of claim 29, wherein the first and second coupling
2 mechanisms are separated by an angle of approximately 180 degrees.

1 39. The bundle claim of claim 29, further comprising:
2 a first support element extending from the body and positioned proximate the first
3 coupling mechanism, wherein the first support element, upon coupling the first
4 coupling mechanism with a second bundle clip, abuts an exterior surface of the
5 second bundle clip; and
6 a second support element extending from the body and positioned proximate the second
7 coupling mechanism, wherein the second support element, upon coupling the
8 second coupling mechanism with a third bundle clip, abuts an exterior surface of
9 the third bundle clip.

1 40. The bundle clip of claim 29, wherein the cylindrical shaped body
2 comprises an oval shape.

1 41. A rack mounted installation comprising:
2 a rack, the rack comprising a generally rectangular housing having an interior cavity;
3 a number of blades disposed in the interior cavity of the housing, each of at least some of
4 the blades including a number of connectors, each connector for coupling with a
5 cable; and
6 a cable harness, the cable harness including
7 a frame attached to the rack, the frame including a number of channels,
8 each channel for routing at least one cable from one of the blades
9 and toward a rear of the rack, and
10 a channel array attached to the frame, the channel array including a
11 number of channels, each channel for routing at least one cable
12 from one of the blades and towards one side of the rack.

1 42. The installation of claim 41, further comprising a second channel array
2 attached to the frame, the second channel array including a number of channels, each
3 channel for routing at least one cable from one of the blades and toward an opposing side
4 of the rack.

1 43. The installation of claim 41, further comprising:
2 a first cable clip to hold at least one cable extending from one of the blades; and
3 a second cable clip to hold at least one cable extending from one of the blades, the second
4 cable clip having a coupling mechanism on one end coupled with a mating
5 coupling mechanism on one end of the first cable clip.

1 44. The installation of claim 43, further comprising:
2 a first bundle clip to hold a group of cables associated with the first cable clip; and
3 a second bundle clip to hold a group of cables associated with the second cable clip, the
4 second bundle clip having a coupling mechanism on one side coupled with a
5 mating coupling mechanism on one side of the first bundle clip.

1 45. The installation of claim 43, wherein each of the first and second cable
2 clips is holding cables associated with a same one of the blades.

1 46. The installation of claim 45, wherein all cables associated with the same
2 one blade are placed in one channel of the cable harness, the one channel comprising a
3 channel of the channel array or a channel of the frame.

1 47. A method comprising:
2 securing a first set of cables extending from a blade in a first cable clip, the blade
3 disposed in a rack;
4 securing a second set of cables extending from the blade in a second cable clip;
5 attaching the second cable clip to the first cable clip;
6 inserting the first set of cables into a first bundle clip;
7 inserting the second set of cables into a second bundle clip; and
8 attaching the second bundle clip to the first bundle clip.

1 48. The method of claim 47, further comprising routing the first and second
2 sets of cables into one of a number of channels of a cable harness, the one channel
3 routing the first and second sets of cables toward a raceway disposed adjacent to the rack.

1 49. The method of claim 48, wherein the one channel routes the first and
2 second sets of cables toward a side of the rack.

1 50. The method of claim 48, wherein the one channel routes the first and
2 second sets of cables toward a rear of the rack.

1 51. A method comprising:
2 disposing a first group of cables within a first channel of a cable harness, the cable
3 harness installed on a rack, the first channel routing the first group of cables
4 towards a side of the rack; and
5 disposing a second group of cables within a second channel of the cable harness, the
6 second channel routing the second group of cables towards a rear of the rack.

1 52. The method of claim 51, wherein the first group of cables are each
2 connected with a first blade disposed in the rack and the second group of cables are each
3 connected with a second blade disposed in the rack.

1 53. The method of claim 52, further comprising:
2 securing each of the first group of cables within one of a first number of interconnected
3 cable clips; and
4 securing each of the second group of cables within one of a second number of
5 interconnected cable clips.

1 54. The method of claim 53, further comprising:
2 holding the first group of cables within a corresponding first number of interconnected
3 bundle clips; and
4 holding the second group of cables within a corresponding second number of
5 interconnected bundle clips.